APPENDIX C: Program Accomplishments

The Superfund program's workload is tracked through a series of site and project milestones that are referred to as the "Superfund pipeline." This term is most often used in reference to the Superfund remedial program, encompassing the activities that flow from analysis and characterization of the site's contamination to the selection, design, and construction of the site's remedial actions. For purposes of simplicity, most of this discussion focuses on the remedial investigation/feasibility study (RI/FS), the Record of Decision (ROD), remedial design (RD), and remedial action (RA). For all pipeline activities, the numbers of Fund-financed and potentially responsible party (PRP)-lead actions, and the total Fund/PRP actions are reported. In addition, the numbers of construction completions at NPL sites and five-year reviews are discussed. While Superfund has more outcome-oriented measures of success that are discussed at the end of this section, pipeline activity measures provide the best gauge of workload trends.

In recent years, the traditional Superfund site and project work has been complemented with additional "Superfund alternative" site actions, which are the substantive equivalent of National Priorities List (NPL) remedial activities. While the RI/FS work may be conducted as a Fund-financed action, RD/RA work at Superfund alternative sites is always conducted by the PRPs.

The Superfund enforcement workload closely tracks with remedial program activities, and can also be summarized using site and project milestones. The RD/RA negotiation completion milestone, de minimis settlements, and cost recovery actions for past costs over $200,000 addressed are presented to provide an overview of the enforcement program's unique workload.

The Superfund removal program has a streamlined cleanup process, with most actions completed in less than a year. The removal program workload is reported here using two measures: NPL removal starts and non-NPL removal starts. Over and above its site cleanup accomplishments, the removal program serves as EPA's focus for emergency preparedness and response. In recent years, the program has been the conduit for EPA's primary contributions to the nation's homeland security initiatives. The program's most noteworthy activities include responding to the attacks on the World Trade Center, cleaning up the anthrax contamination of the Hart Senate Office Building, and recovering debris from the space shuttle *Columbia*.

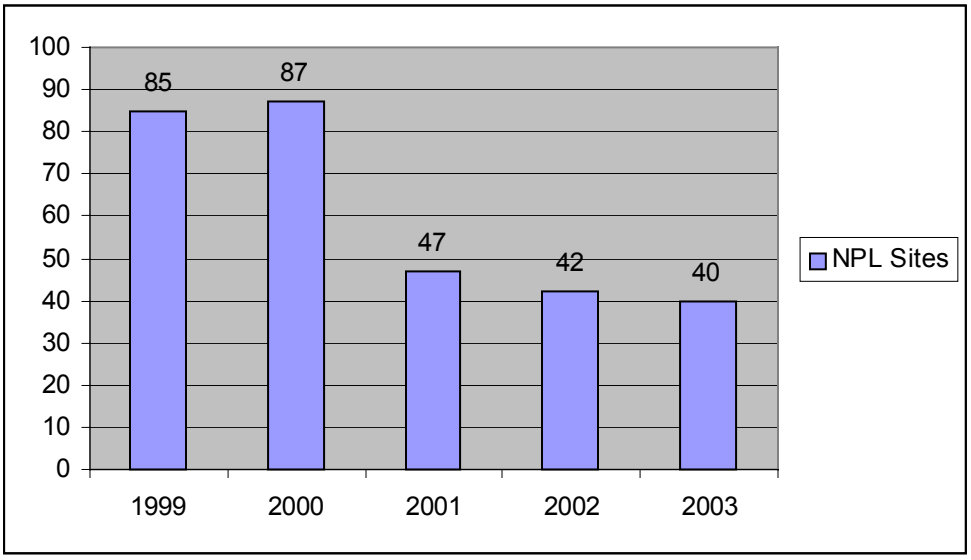
Remedial Pipeline Accomplishments

Since the Superfund program's establishment in 1980, 1,518 sites have been placed on the NPL (274 have since been deleted from the NPL). The majority of final NPL sites were listed in the early years of the Superfund program, and by 1992, the final list contained over 1,200 sites. Since that year, NPL listing has averaged approximately 30 sites annually. As would be expected, after an initial surge of listings, the program would slowly achieve a steady-state at a much lower level of annual listings than at its inception.

Of the 1,518 final NPL sites, 177 are federal facility sites where EPA does not fund the remediation. For this reason, in the balance of this section, data reporting will focus on the nonfederal facility (privately owned) NPL sites. All data are reported as of the end of FY 2003 (September 30, 2003).

Since the early 1990s, EPA has focused its reporting of NPL accomplishments on achievement of "construction completion"--the completion of cleanup at a site. This measure is a critical indicator of overall program progress, and is the culmination of years of work moving sites through the Superfund pipeline. Accordingly, this section describes the accomplishments and trends in the response and enforcement activities that led to those completions.

Figure 6: Construction Completes



Remedial pipeline activities are reported using the total number of activities, the percentage of NPL sites that number represents, and the average annual workload for the Fiscal Years 1999 through 2003 timeframe. Any clear trends evident during that timeframe are also reported. Overall, remedial activity levels are reduced from the peak levels of the 1990s; early pipeline activities (RI/FS, ROD, and RD starts) show the greatest reductions, while the ongoing remedial action construction workload remains very high.

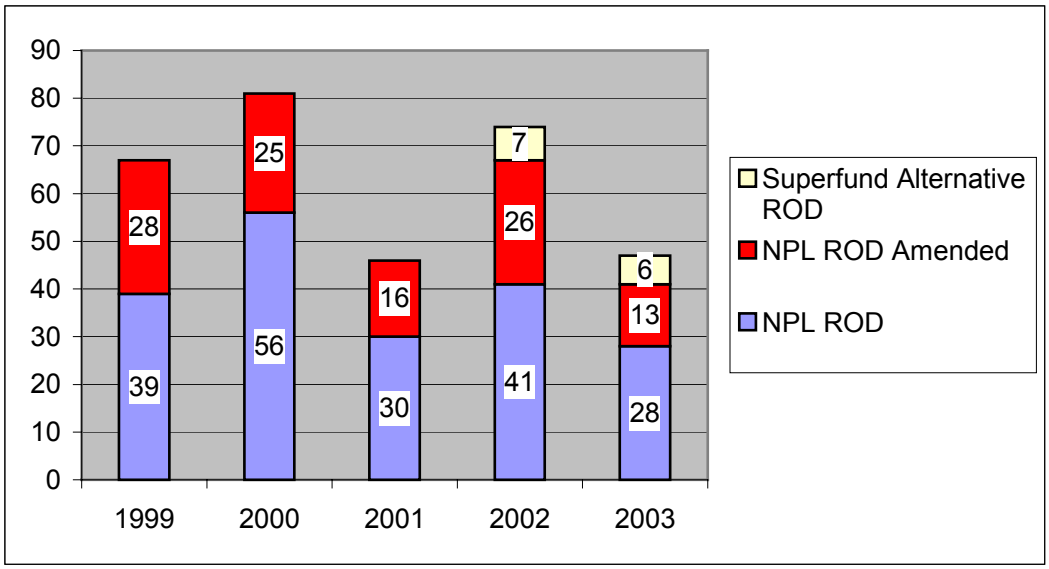
Studies and Records of Decisions

Of 1,395 (private) NPL sites, 1,334 (96 percent) have begun their RI/FS work, and 2,300 RI/FS actions have begun at these NPL sites. (Given the size of some sites or site complexity, the Agency may conduct multiple studies at a site). In recent years, an average of 51 RI/FS projects were begun annually, and the rate of RI/FS starts has declined by approximately 35 percent over the past five years. This reflects the maturing

of the program as many sites listed at the beginning of Superfund move through the pipeline.

At this point in time, the earlier phases of the pipeline are focusing on a reduced number of new sites. Selection of the remedy, in a ROD, represents the culmination of the RI/FS. A total of 1,164 sites (83 percent) have had one or more RODs signed, for a total of 1,718 RODs. During Fiscal Years 1999 through 2003, an average of 41 RODs were signed annually, and an additional 18 ROD amendments were signed annually. For both RI/FS starts and RODs, current activity levels are a much lower than the levels of ten years ago, when approximately 100 RI/FS were initiated and 140 RODs were signed annually. This reflects that initially the Superfund program had to identify the "backlog" of sites, assess them, list them and begin to clean them up. This task was successfully completed in the early years of the program, and now it continues to identify and list new sites as they arise.

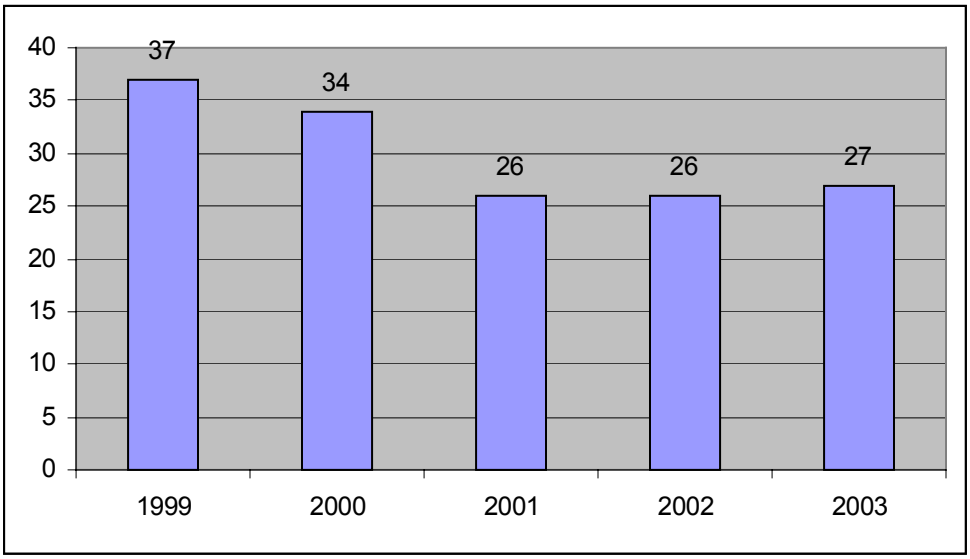
Figure 7: ROD and ROD amendments



RD/RA Negotiations and Remedial Design

Except for the small minority of sites that have no identifiable PRPs, EPA conducts RD/RA negotiations after remedy selection and before initiating the RD. This is part of the Agency's enforcement first initiative. If unsuccessful, the RD project will be funded by appropriated dollars; if successful, RD/RA activities will be conducted by the potentially responsible party (PRP). These negotiations, and the PRP search work that precedes them, have enabled EPA to successfully pursue its goal of having PRPs take the lead at 70 percent of all RD/RA work. Based on the annual average of 42 RODs in recent years, EPA has completed an average of 31 RD/RA negotiations a year.

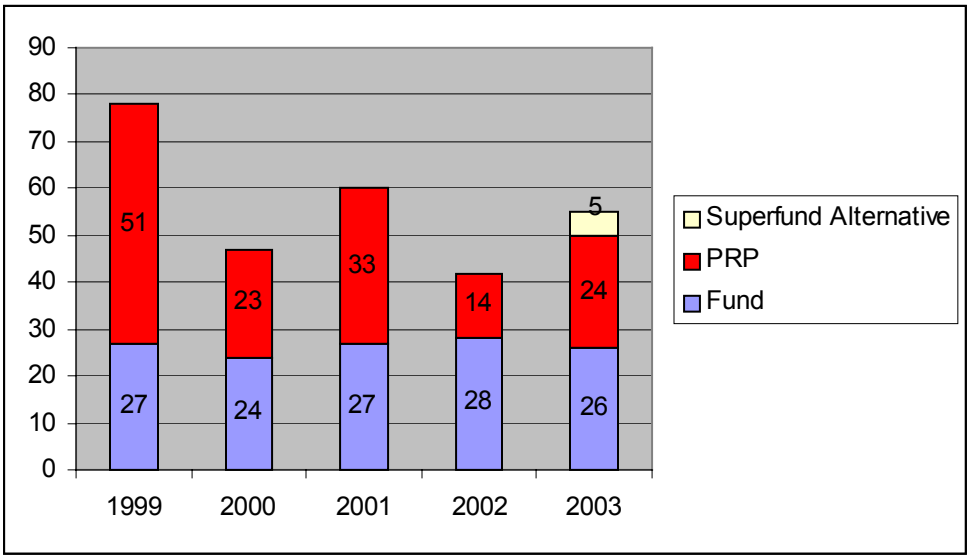
Figure 8: RD/RA Negotiations with PRPs Completed



The total value of Superfund response settlements since 1995 exceeds $7.5 billion, reflecting the highly successful implementation of the enforcement-first policy that has been in place since 1989. Settlements averaged nearly $1 billion annually during FY 2000–2003.

A total of 2,085 RD projects were started at 1,030 NPL sites (74 percent of the NPL) during 1999–2003, and EPA averaged 56 annual RD starts for the period. The annual average for RD starts has declined during the past five years, and current RD start levels are approximately half the levels of a decade ago. As with other pipeline measures, this decrease reflects the program's attainment of steady state operation in the earlier phases of the work required to clean up a Superfund site. During the most recent five years, PRP-lead RD starts have averaged 29 a year, relative to 27 Fund RD starts, or approximately 53 percent of the total.

Figure 9: Remedial Designs Started

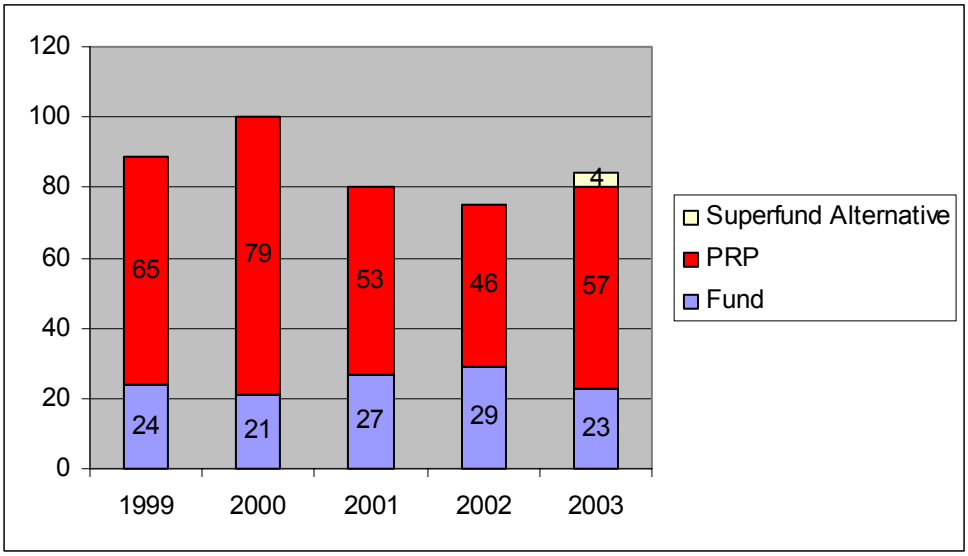


Remedial Actions

The final major stage of the remedial process is construction of the remedial action. RA projects have been initiated at 990 sites (71 percent of the private NPL sites), and 1,881 RAs have begun at these sites. RA starts have averaged 72 a year during 1999–2003, with an average of 18 Fund-led and 54 PRP-led RA projects started each year. Because many RA projects take several years to complete, reporting RA completions is important for determining workload trends.

A total of 1,431 RA projects have been completed at 815 NPL sites, which represents 58 percent of private NPL sites with at least one RA project completed. (The RA completion milestone occurs after construction completion and includes additional administrative tasks including a detailed report on the work completed at the site.) In recent years, an average of 85 RA projects have been completed annually, with this average being divided between 24 Fund-lead and 61 PRP-lead projects. Unlike the earlier stages of the remedial pipeline, RA starts and completions remain at levels close to their high-water mark of the mid-1990s, when an average of 90 RA projects were completed every year.

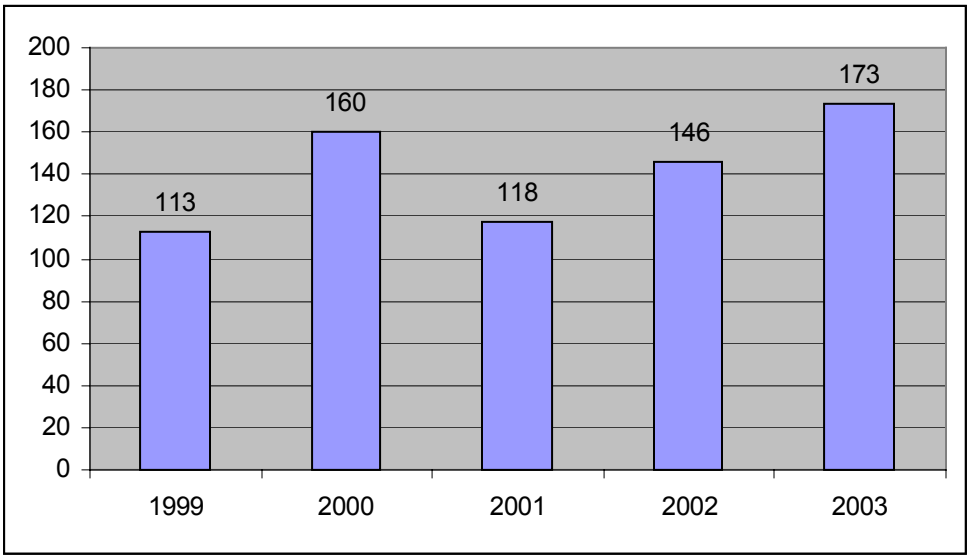
Figure 10: Remedial Actions Completed



All of this work leads to completing construction at an NPL site. At the end of FY 2003, construction was completed at 63 percent of private NPL sites (886 sites). From an annual high of 85 construction completions, EPA is currently completing construction at about 40 NPL sites a year. The high rate of completions in the 1990s was possible because the majority of sites added to the NPL in the first five years of the Superfund program were close to completion when the new measure was created. The new emphasis on completions allowed the Agency to finish a large number of sites in a very short time. Prior to making construction completion a measure of program success, the emphasis had been on starting work at the worst sites. An unintended consequence of this strategy was that it often left necessary but lower priority work at nearly completed sites unfinished. By stressing completing sites, this work was quickly accomplished and many sites completed. In addition by FY 2000, the lower rate of NPL listing during the 1990s had resulted in a reduced number of sites moving through design and construction to completion.

With the majority of NPL sites having completed construction, the "post-construction" workload of five-year reviews (required for all sites where any wastes above the applicable health-based standard remain contained on site) and long-term response actions (LTRAs -- the first ten-year operational period for Fund-financed Groundwater Pump and Treatment systems for restoration) is at record levels. Five-year reviews were completed at some 134 sites annually during Fiscal Years 1999 through 2003, and at the end of FY 2003, the Regions had initiated 84 LTRA projects. The exact dimensions of this post-construction workload are still developing, although it is clear that the vast majority of NPL sites will need continuing care for years to come.

Figure 11: 5-year Reviews



What remains to be completed is a group of sites that on average are more complex and costly, and are weighted more heavily toward the RA phase of the pipeline than the program workload of the earlier years of the Superfund program. At the end of FY 2003, 375 RA projects were underway, while only 230 RD projects were awaiting completion. This represents a much greater share of ongoing work in the most costly RA stage than has previously been the case.

Federal Facility Accomplishments

Most federal facility sites were added to the NPL in the late 1980s and early 1990s, about six to eight years later than most private sites. In addition to being added to the NPL later, many federal facility sites are larger and more complex than privately owned sites. The Agency has separate federal facility programs in both the Office of Enforcement and Compliance Activities and the Office of Solid Waste and Emergency Response to manage the interaction that culminates in the signing of interagency memoranda of agreement that establish enforceable response schedules. Without EPA attention, it is unlikely that these sites would be moving through the remediation process at their current rate.

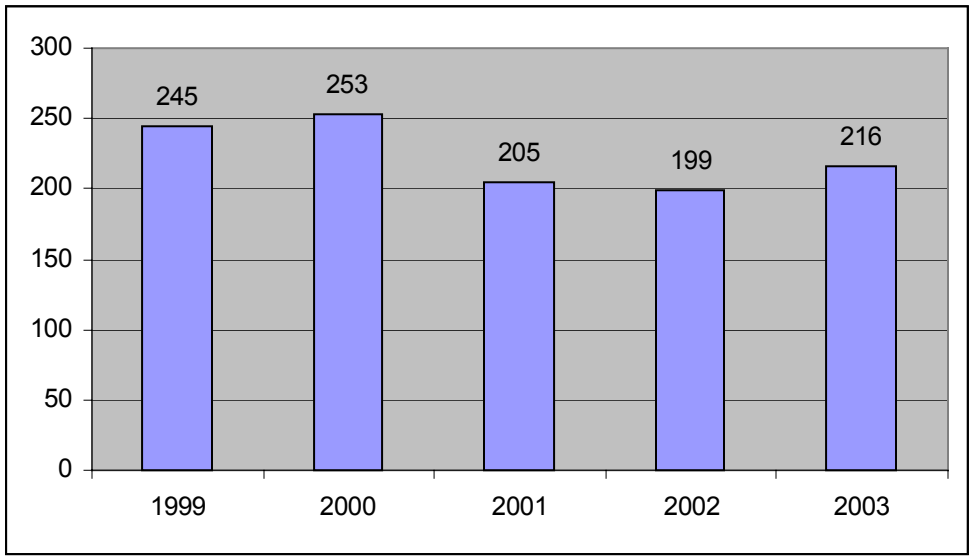
The federal facility NPL program grew from 120 sites in 1992 to 177 sites today. During this timeframe, the number of ongoing federal facility RI/FS projects has grown from 279 to 503. However, the increased workload for the RA phase most clearly demonstrates the tremendous growth of the federal facility remedial program. Ongoing RA projects increased from 13 to 230, and completed RA projects increasing from 10 to 584. While much work remains at these often very large, complex sites, much progress is evident, with 40 federal facility sites having completed construction.

Additional Enforcement Accomplishments

The high ratio of remedial pipeline work conducted by PRPs is the clearest accomplishment of the Superfund Enforcement program. It is also noteworthy to briefly highlight some of the work performed to resolve the liability issues of smaller parties (de minimis settlements) and the enforcement actions that address past costs in excess of $200,000 through cost recovery actions. Since increasing its emphasis on fairness in enforcing the Superfund program, EPA has negotiated with companies which contributed lower amounts or less toxic wastes to sites and has offered de minimis settlements to resolve their liability. A total of 539 de minimis settlements have been completed since FY 1987, with an annual average of 22 de minimis settlements from Fiscal Years 1999 through 2003.

Some 226 annual decisions have been reached in the past five years to address past costs at NPL and non-NPL sites where EPA's costs incurred were in excess of $200,000. Superfund cost recovery settlements have totaled $3.9 billion over the history of the Superfund program. During Fiscal Years 1999 through 2003, they averaged more than $200 million per year.

Figure 12: Cost Recovery Final Decisions (Past Costs > $200K)



While quite rare only ten years ago, establishing and managing special accounts has recently been an area of emphasis and growth in recent years. Special accounts result from consent decrees between the Agency and settling PRPs where funds from a PRP are placed in an account to be used for Agency past or future costs or PRP use. Since the Superfund program began, $1.38 billion in cash receipts has been collected through special accounts, and over $700 million has been collected in the past five years. Negotiating with PRPs to establish special accounts has become a significant Superfund

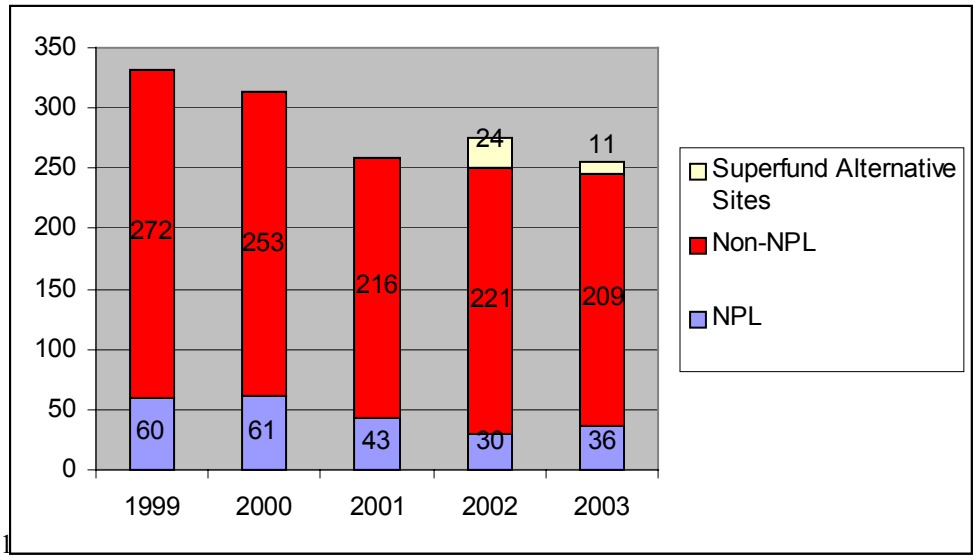
enforcement workload, and are providing a critical source of response funding for ongoing and future response actions.

Superfund alternative sites are another accomplishment that links best to the enforcement program. These sites are important to acknowledge because they have been determined through Superfund site assessments to be eligible for listing on the NPL, therefore, they would typically require extensive response action. While sometimes jump-started by funding the RI/FS with appropriated funds, the remedial design and remedial action for these sites is always conducted by a PRP. In addition, past costs are commonly recovered, and/or special accounts are established to finance future EPA activities including oversight. Work at a total of 109 Superfund alternative sites has been initiated in recent years, and the program has incorporated activities at these sites into its detailed progress reporting measures. During FY 2002, 35 removal actions were conducted at Superfund alternative sites, and another 28 RI/FS projects were begun and 13 RODs were completed. While most Superfund Alternative sites are still early in the response process, 9 RA projects were started and 5 RA projects were completed at these sites during FYs 2002 and 2003. Some of this work occurred prior to 2002, but it was not tracked in the Agency's management systems.

Superfund Removal Program

More than 7,000 removal actions have been started at more than 5,000 sites since the inception of the Superfund program. Removals occur at both NPL and non-NPL sites, and are generally short-term, limited-cost response actions taken to address more urgent and clear-cut public health risks than remedial actions at NPL sites. During Fiscal Years 1999 through 2003, an average of 49 removals at NPL sites and over 240 removals at non-NPL were initiated annually. These actions have made NPL sites safe in the short-term so that long-term remedial activities may proceed without undue risk to public health. For the more than 4,000 sites not on the NPL, the removal action has either stabilized or fully cleaned up the property so that no additional federal action is necessary.

Figure 13: Removals Completed



Unlike the Superfund remedial program, where typically 70 percent of response actions are implemented by PRPs, only one-third of removal actions have been conducted by PRPs historically. A very positive trend toward more PRP-lead removal actions is evident during the past five years, with the national share growing steadily from 30 percent in FY 1999 to 49 percent in FY 2003. There is a great deal of variation across the EPA regions, however, with the Fiscal Years 1999 through 2003 average rate of PRP-lead removals ranging from a low of 12 percent to a high of 59 percent.

Additional Measures of Success

Superfund pipeline, enforcement, and removal activities are important measures of workload, and reflect the detailed internal tracking of the Superfund program's progress that is essential to the program's internal management. However, these measures do not necessarily communicate the successes of the program, or the outcomes of resource expenditures.

The number of NPL sites where response actions prevent unacceptable human exposure to site contaminants is one example of such a measure of success. At the end of FY 2003, 82 percent of all NPL sites had controls in place to prevent such exposures. Most Superfund sites have a combination of surface contamination and contaminated groundwater, and groundwater typically takes much longer to address. At the end of FY 2003, 65 percent of NPL sites with contaminated groundwater had controls in place to prevent the spread of this contamination within the affected aquifer. While this percentage may seem low, the Superfund program addresses immediate threats to public health or the environment with its removal program. This allows the remedial program the time necessary to focus on selecting the proper long-term alternative. Part of the time required to do this is not only the scientific study necessary, but also the robust community involvement at the heart of the remedy selection process.